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(Red)



105 Terry Drive, Suite 114
Newtown, Pennsylvania 18940
(215) 968-7755
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April 27, 1990

Benjamin Mykijewycz
3HW13
Site Investigation
USEPA Region III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

PA-1749

Re: Pennwood Crossing EPA ID Number PAD 981102833

Dear Mr. Mykijewycz:

This letter is in reference to the CERCLIS listing of Morrisville/Pennwood Crossing Trailer Park. Fuel lines serving oil to each trailer did not operate correctly and fuel oil leaked. This fuel oil was recovered under PADER supervision and PADER approved a closure plan for the site. Enclosed are the "Final Closure Report Oil Recovery Operations" prepared for the responsible oil company, Meenan Oil Company, Inc. and the PADER approval of closure.

We would appreciate your investigating the CERCLIS listing for this site and having a designation of no further action entered into the computer data base for this site. We would appreciate this letter and attachments being placed in the EPA file under the CERCLIS listing.

If there are any questions or you require additional information, feel free to contact me.

Sincerely,

Geraghty & Miller, Inc.

Carol S. Graff
Associate/Principal Scientist

cc: Steven Adler

sd

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COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES

1875 New Hope Street
Norristown, PA 19401
215 270-1975



March 7, 1990

Mr. Steve Adler
Uniprop
280 Daines Street
Birmingham, Michigan 48009

Re: Pennwood Crossing
Falls Township
Bucks County

Dear Mr. Adler:

This is to inform you that we have completed a review of the report entitled "Final Closure Report, Oil Recovery Operations," dated August 15, 1989, prepared by Blasland & Bouck, P.E., for the referenced site.

As I stated to you in our telephone conversation on March 6, 1990, the case file was a part of this review. Based on the data obtained and submitted to this office and the fulfillment of requirements requested in my letter of August 23, 1988, we approve of the final closure of the oil recovery and associated monitoring program at the Pennwood Crossing site. Implementation of Section 3 - Closure may proceed as described in the August 1989 report.

I would like to reiterate that this approval is for the closure of a free-phase oil recovery and monitoring system, and that the Department does not certify sites as being clean, nor do we waive liability under existing laws in the event future contamination is documented at sites.

If you have any questions, please feel free to contact me.

Very truly yours,

ROBERT E. DAY-LEWIS
Hydrogeologist

cc: Mr. Tureikas
Mr. Kuebler
Mr. Wills
Ms. Steele
Re 30 (SMS)66

FINAL CLOSURE REPORT OIL RECOVERY OPERATIONS

Meenan Oil Company, Inc.

Tullytown, Pennsylvania

August 1989



BLASLAND & BOUCK ENGINEERS, P.C.
BLASLAND, BOUCK & LEE
ENGINEERS & GEOSCIENTISTS

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FINAL CLOSURE REPORT

OIL RECOVERY OPERATIONS
PENNWOOD CROSSING

MEENAN OIL COMPANY, INC.
TULLYTOWN, PENNSYLVANIA

AUGUST 1989

BLASLAND & BOUCK ENGINEERS, P.C.
6723 TOWPATH ROAD
SYRACUSE, NEW YORK 13214

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SECTION 1 - INTRODUCTION

Meenan Oil Company, Inc., has operated an oil recovery program at the Pennwood Crossing, Pennsylvania site since 1984. The recovery of free product began in January 1984 with the installation of a ground-water depression pump and oil scavenger. The recovery of free product continued until April 1988 when, due to greatly diminished quantities of recovered product, the Pennsylvania Department of Environmental Resources (PADER) allowed the recovery operation to be reduced to only measuring the depths to water and oil in the monitoring wells and hand bailing any free product. The recovery well and monitoring well locations are shown on Figure 1.

A site visit was made by PADER, the Bucks County Health Department, Meenan Oil Company, Inc., and Blasland & Bouck Engineers, P.C., in August 1988. Following the visit, PADER sent a letter (dated August 23, 1988) to Blasland & Bouck, which stated that closure would be approved provided that: 1) ground water from the recovery well and five monitoring wells be sampled and analyzed for dissolved total petroleum hydrocarbons (EPA Method 418.1); 2) any measurable free product in the recovery well and monitoring wells be removed manually; and 3) at the completion of six months with no free product, a Final Closure Report should be submitted to PADER with well abandonment methods and a timetable.

Ground-water from the recovery well and five monitoring wells were sampled and analyzed in October 1988. The data were reported to PADER in a letter from Blasland & Bouck dated November 22, 1988. The recovery well and the monitoring wells have been measured for depth to water and oil, and any free product manually removed between April 1988 and May 1989. No measurable product has been observed in the recovery well or monitoring

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wells between December 1988 and May 1989. Because the wells have not had any product in them for six months, this report represents the Final Closure Report for the recovery operations at the Pennwood Crossing site.

SECTION 2 - OIL RECOVERY

Since the initiation of oil recovery activities at the Pennwood Crossing site in January 1984, approximately 14,033 gallons of oil have been recovered. Figure 2 shows a decline in total oil recovered from approximately 7,600 gallons in 1984 (the first year of operation) to 18.5 gallons for the first five months of 1988 (the fifth year of operation). Gallons per month have also declined from 1,454 gallons for February 1984 to 6 gallons for April 1988.

The tables included in this report present the depth to oil and depth to water measurements obtained in the monitoring wells between November 1988 and May 1989. In November 1988, four wells had slight thicknesses of oil present (ranging between 0.01 feet to 0.06 feet), but after the free product was removed, no additional free product has occurred in any of the monitoring wells.

SECTION 3 - CLOSURE

The final closure of the oil recovery and monitoring program at the Pennwood Crossing site is proposed based on the fulfillment of the requirements stated in the PADER letter of August 23, 1988. Specifically, no free product has occurred in the wells at the Pennwood Crossing site over the six month period between December 1988 and May 1989 and the recovery well and five monitoring wells have been sampled and analyzed for total petroleum hydrocarbons, with the results transmitted in an earlier submitted dated November 22, 1988.

Final closure of the oil recovery activities at the Pennwood Crossing site will consist of the in-place abandonment of the 24-inch diameter recovery well, and the removal and abandonment of the monitoring wells. The recovery well will be pumped full of cement, via tremie pipe, filling the well from the bottom upward. Water displaced by the cement in the well will be contained and transported to Meenan Oil's Tullytown Terminal and placed through their oil/water separator as a precautionary measure. The procedure for the abandonment of the monitoring wells is described below.

Monitoring Well Abandonment Procedure

1. Obtain and review well construction logs, if available.
2. Determine casing and screen length, borehole diameter and backfill material in annular space.
3. Determine necessary equipment, tool, and material requirements for abandonment (rigs, drilling tools, grouting equipment and materials).
4. Remove surface seal and protective casing prior to drilling.

5. Overdrill the total depth of casing and screen using 6-inch inside diameter (ID) hollow-stem augers (HSA).
6. With the HSA in the hole, pull the casing and the screen from inside the HSA. If the casing and screen cannot be extracted from the borehole, move to Step 7 and grout with casing and screen in place.
7. Calculate the volume of grout (cement) required for each borehole and mix up an appropriate amount of grout. The volume of grout required will be based on the size of the HSA used to "overdrill" the well.

For 6-inch ID HSA, the actual borehole outside diameter will be approximately 12 inches, which results in a grout volume of 2.2 ft³ per foot of borehole length. Grout used shall be mixed in accordance with manufacturer's recommendations. Clean tap water shall be used to mix the grout.

8. Pressure grout the borehole from the bottom up using a tremie pipe while slowly removing the HSA. Grout will be pumped into the tremie pipe using a positive displacement pump to maintain a constant pressure at the discharge of the tremie pipe. Continue pulling the HSA and raising the tremie pipe until the borehole has been filled to approximately two to three feet below the ground surface. The grout will not be placed to the surface because most of the wells are located in the residents' yards and will be seeded with grass upon completion.

If the casing or the screen cannot be removed, then pressure grouting will be performed by the tremie method inside the well to insure that the interior of the well is completely filled with grout.

9. Allow 24 hours for curing the return and "top off" the hole using the same grout mixture, again to approximately two to three feet below the ground surface. After the grout has cured, the remaining two to three feet will be backfilled with native soil and then seeded.
10. A field report will be prepared detailing what work was actually conducted at each well location and submitted to PADER.

The well abandonment can be initiated once PADER approves this Final Closure Report. It is estimated that the abandonment of the recovery well and monitoring wells will take approximately two weeks. The actual start date is contingent upon the availability of the drilling contractor, but will be scheduled as soon as possible after receiving permission to proceed from

PADER. Upon completion of the well abandonments, a letter report will be issued to PADER detailing the final closure activities.

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MEENAN OIL COMPANY
PENNWOOD CROSSING
DEPTHS TO WATER AND OIL
11/3/88

<u>Well No.</u>	<u>Depth to Oil (ft.)</u>	<u>Depth to Water (ft.)</u>	<u>Comments</u>
1	--	17.13	
2	--	16.26	
3	--	16.13	
4	--	16.51	
5			Missing
6			Missing
7	19.07	19.10	
8	--	17.57	
9	16.83	16.89	
10	--	17.34	
11	17.78	17.79	
12	--	15.83	
13			Missing
14			Dry
15	--	18.51	
16	17.03	17.04	
17	--	16.57	
18	--	18.21	
19	--	19.07	
20			
21	--	26.47	Clogged
22	--	27.66	
23			Missing

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MEENAN OIL COMPANY
PENNWOOD CROSSING
DEPTHS TO WATER AND OIL
12/6/88

<u>Well No.</u>	<u>Depth to Oil (ft.)</u>	<u>Depth to Water (ft.)</u>	<u>Comments</u>
1	--	16.49	
2	--	15.59	
3	--	15.46	
4	--	15.83	
5			Missing
6			Missing
7	--	17.98	
8	--	16.87	
9	--	16.15	
10	--	16.82	
11	--	17.17	
12	--	15.27	
13			Missing
14	--	18.88	
15	--	17.86	
16	--	16.21	
17	--	16.01	
18	--	17.45	
19	--	18.41	
20			Clogged
21	--	25.93	
22	--	27.24	
23			Missing

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MEENAN OIL COMPANY
PENNWOOD CROSSING
DEPTHS TO WATER AND OIL
12/13/88

<u>Well No.</u>	<u>Depth to Oil (ft.)</u>	<u>Depth to Water (ft.)</u>	<u>Comments</u>
1	--	16.61	
2	--	15.73	
3	--	15.64	
4	--	15.99	
5			Missing
6			Missing
7	--	18.07	L
8	--	16.98	
9	--	16.19	
10	--	16.87	
11	--	17.29	
12	--	15.33	
13			Missing
14	--	18.97	L
15	--	17.94	L
16	--	16.49	
17	--	16.07	
18	--	17.62	
19	--	18.47	
20			Clogged
21	--	25.85	
22	--	27.17	
23 /			Missing

Note:

L = Locks were tampered with.

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MEENAN OIL COMPANY
PENNWOOD CROSSING
DEPTHS TO WATER AND OIL
12/20/88

<u>Well No.</u>	<u>Depth to Oil (ft.)</u>	<u>Depth to Water (ft.)</u>	<u>Comments</u>
1	--	16.78	
2	--	15.92	
3	--	15.82	
4	--	16.19	
5			Missing
6			Missing
7	--	18.25	
8	--	17.17	
9	--	16.53	
10	--	17.04	
11	--	17.46	
12	--	15.52	
13			Missing
14			Dry
15	--	18.12	
16	--	16.68	
17	--	16.25	
18	--	17.80	
19	--	18.66	
20			Clogged
21	--	25.97	
22	--	27.27	
23			Missing

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MEENAN OIL COMPANY
PENNWOOD CROSSING
DEPTHS TO WATER AND OIL
12/27/88

<u>Well No.</u>	<u>Depth to Oil (ft.)</u>	<u>Depth to Water (ft.)</u>	<u>Comments</u>
1	--	16.91	
2	--	16.06	
3	--	15.94	
4	--	16.32	
5			Missing
6			Missing
7	--	18.38	
8	--	17.33	
9	--	16.64	
10	--	17.15	
11	--	17.58	
12	--	15.59	
13			Missing
14	--	19.32	
15	--	18.24	
16	--	16.77	
17	--	16.36	
18	--	17.92	
19	--	18.77	
20			Missing
21	--	26.11	
22	--	27.38	
23			Missing

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MEENAN OIL COMPANY
PENNWOOD CROSSING
DEPTHS TO WATER AND OIL
1/3/89

<u>Well No.</u>	<u>Depth to Oil (ft.)</u>	<u>Depth to Water (ft.)</u>	<u>Comments</u>
1	--	17.01	
2	--	16.13	
3	--	16.03	
4	--	16.42	
5			Missing
6			Missing
7	--	18.48	
8	--	17.43	
9	--	16.74	
10	--	17.23	
11	--	17.67	
12	--	15.68	
13			Missing
14	--	19.39	
15	--	18.37	
16	--	16.86	
17	--	16.43	
18	--	18.01	
19	--	18.89	
20			Missing
21	--	26.21	
22	--	27.48	
23			Missing

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MEENAN OIL COMPANY
PENNWOOD CROSSING
DEPTHS TO WATER AND OIL
1/10/89

<u>Well No.</u>	<u>Depth to Oil (ft.)</u>	<u>Depth to Water (ft.)</u>	<u>Comments</u>
1	--	16.14	
2	--	16.23	
3	--	16.16	
4	--	16.54	
5			Missing
6			Missing
7	--	18.61	
8	--	17.57	
9	--	16.88	
10	--	17.38	
11	--	17.88	
12	--	15.79	
13			Missing
14			Dry
15	--	18.46	
16	--	16.98	
17	--	16.55	
18	--	18.13	
19	--	19.01	
20			Missing
21	--	26.32	
22	--	27.56	
23			Missing

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MEENAN OIL COMPANY
PENNWOOD CROSSING
DEPTHS TO WATER AND OIL
1/17/89

<u>Well No.</u>	<u>Depth to Oil (ft.)</u>	<u>Depth to Water (ft.)</u>	<u>Comments</u>
1	--	17.04	
2	--	16.16	
3	--	16.03	
4	--	16.42	
5			Missing
6			Missing
7	--	18.55	
8	--	17.48	
9	--	16.77	
10	--	17.22	
11	--	17.67	
12	--	15.73	
13			Missing
14			Dry
15	--	18.40	
16	--	16.92	
17	--	16.45	
18	--	18.09	
19	--	18.98	
20			Missing
21	--	26.35	
22	--	27.59	
23			Missing

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MEENAN OIL COMPANY
PENNWOOD CROSSING
DEPTHS TO WATER AND OIL
1/24/89

<u>Well No.</u>	<u>Depth to Oil (ft.)</u>	<u>Depth to Water (ft.)</u>	<u>Comments</u>
1	--	17.12	
2	--	16.25	
3	--	16.13	
4	--	16.52	
5			Missing
6			Missing
7	--	18.62	
8	--	17.57	
9	--	16.87	
10	--	17.33	
11	--	17.76	
12	--	15.11	
13			Missing
14			Dry
15	--	18.47	
16	--	16.99	
17	--	16.54	
18	--	18.03	
19	--	19.05	
20			Clogged
21	--	26.38	
22	--	27.61	
23			Missing

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MEENAN OIL COMPANY
PENNWOOD CROSSING
DEPTHS TO WATER AND OIL
1/31/89

<u>Well No.</u>	<u>Depth to Oil (ft.)</u>	<u>Depth to Water (ft.)</u>	<u>Comments</u>
1	--	17.18	
2	--	16.32	
3	--	16.19	
4	--	16.59	
5			Missing
6			Missing
7	--	18.67	
8	--	17.63	
9	--	16.95	
10	--	17.38	
11	--	17.82	
12	--	15.85	
13			Missing
14			Dry
15	--	18.53	
16	--	16.83	
17	--	16.59	
18	--	18.22	
19	--	19.10	
20			Missing
21	--	26.42	
22	--	27.65	
23			Missing

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MEENAN OIL COMPANY
PENNWOOD CROSSING
DEPTHS TO WATER AND OIL
2/7/89

<u>Well No.</u>	<u>Depth to Oil (ft.)</u>	<u>Depth to Water (ft.)</u>	<u>Comments</u>
1	--	17.23	
2	--	16.37	
3	--	16.25	
4	--	16.64	
5			Missing
6			Missing
7	--	18.72	
8	--	17.69	
9	--	17.82	
10	--	17.42	
11	--	17.88	
12	--	15.91	
13			Missing
14			Dry
15	--	18.57	
16	--	17.08	
17	--	16.64	
18	--	18.14	
19	--	19.14	
20			Missing
21	--	26.48	
22	--	27.67	
23			Missing

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MEENAN OIL COMPANY
PENNWOOD CROSSING
DEPTHS TO WATER AND OIL
2/14/89

<u>Well No.</u>	<u>Depth to Oil (ft.)</u>	<u>Depth to Water (ft.)</u>	<u>Comments</u>
1	--	17.23	
2	--	16.43	
3	--	16.33	
4	--	16.71	
5			Missing
6			Missing
7	--	18.79	
8	--	17.75	
9	--	17.08	
10	--	17.48	
11	--	17.94	
12	--	15.95	
13			Missing
14			Dry
15	--	18.64	
16	--	17.14	
17	--	16.67	
18	--	18.20	
19	--	19.21	
20			Missing
21	--	26.48	
22	--	27.69	
23			Missing

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PENNWOOD CROSSING
DEPTHS TO WATER AND OIL
2/28/89

<u>Well No.</u>	<u>Depth to Oil (ft.)</u>	<u>Depth to Water (ft.)</u>	<u>Comments</u>
1	--	16.63	
2	--	15.72	
3	--	15.59	
4	--	15.96	
5			Missing
6			Missing
7	--	18.15	
8	--	17.04	
9	--	16.34	
10	--	16.79	
11	--	17.25	
12	--	15.32	
13			Missing
14		19.07	
15	--	18.00	
16	--	16.56	
17	--	16.07	
18	--	16.70	
19	--	18.59	
20			Missing
21	--	26.08	
22	--	27.36	
23			Missing

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MEENAN OIL COMPANY
PENNWOOD CROSSING
DEPTHS TO WATER AND OIL
3/14/89

<u>Well No.</u>	<u>Depth to Oil (ft.)</u>	<u>Depth to Water (ft)</u>
	--	16.54
	--	15.67
1	--	15.51
2	--	15.90
3	--	
4		
5		17.95
6	--	16.90
7	--	16.26
8	--	17.66
9	--	17.17
10	--	15.19
11	--	
12		
13		17.81
14	--	16.35
15	--	15.94
16	--	17.38
17	--	18.37
18	--	
19		25.50
20	--	23.85
21	--	
22		
23		

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PENNWOOD CROSSING
DEPTHS TO WATER AND OIL
3/21/89

<u>Well No.</u>	<u>Depth to Oil (ft.)</u>	<u>Depth to Water (ft.)</u>	<u>Comments</u>
1	--	16.43	
2	--	15.58	
3	--	15.51	
4	--	15.87	
5			Missing
6			Missing
7	--	17.92	
8	--	16.84	
9	--	16.25	
10	--	16.72	
11	--	17.13	
12	--	15.14	
13			Missing
14	--	18.83	
15	--	17.77	
16	--	16.30	
17	--	15.88	
18	--	17.44	
19	--	18.32	
20			Missing
21	--	25.33	
22	--	26.68	
23			Missing

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MEENAN OIL COMPANY
PENNWOOD CROSSING
DEPTHS TO WATER AND OIL
4/04/89

<u>Well No.</u>	<u>Depth to Oil (ft.)</u>	<u>Depth to Water (ft.)</u>	<u>Comments</u>
1	--	15.72	
2	--	14.82	
3	--	14.72	
4	--	15.10	
5			Missing
6			Missing
7	--	17.20	
8	--	16.11	
9	--	15.37	
10	--	15.99	
11	--	16.39	
12	--	14.43	
13			Missing
14	--	18.11	
15	--	17.07	
16	--	15.64	
17	--	15.16	
18	--	16.79	
19	--	17.66	
20			Missing
21	--	24.91	
22	--	26.39	
23			Missing

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MEENAN OIL COMPANY
PENNWOOD CROSSING
DEPTHS TO WATER AND OIL
4/11/89

<u>Well No.</u>	<u>Depth to Oil (ft.)</u>	<u>Depth to Water (ft.)</u>
1	--	15.41
2	--	14.52
3	--	14.46
4	--	14.81
5		16.90
6	--	15.81
7	--	15.03
8	--	15.76
9	--	16.14
10	--	14.15
11		17.48
12	--	16.75
13	--	15.35
14	--	14.90
15	--	16.83
16	--	17.33
17	--	
18	--	24.65
19		26.09
20	--	
21	--	
22		
23		

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MEENAN OIL COMPANY
PENNWOOD CROSSING
DEPTHS TO WATER AND OIL
5/02/89

<u>Well No.</u>	<u>Depth to Oil (ft.)</u>	<u>Depth to Water (ft.)</u>	<u>Comments</u>
1	--	15.49	
2	--	14.61	
3	--	14.51	
4	--	14.88	
5			Missing
6			Missing
7	--	16.94	
8	--	15.85	
9	--	15.15	
10	--	15.79	
11	--	16.21	
12	--	14.21	
13			Missing
14	--	17.81	
15	--	16.78	
16	--	14.37	
17	--	14.95	
18	--	16.37	
19	--	17.33	
20			Missing
21	--	24.72	
22	--	26.13	
23			Missing

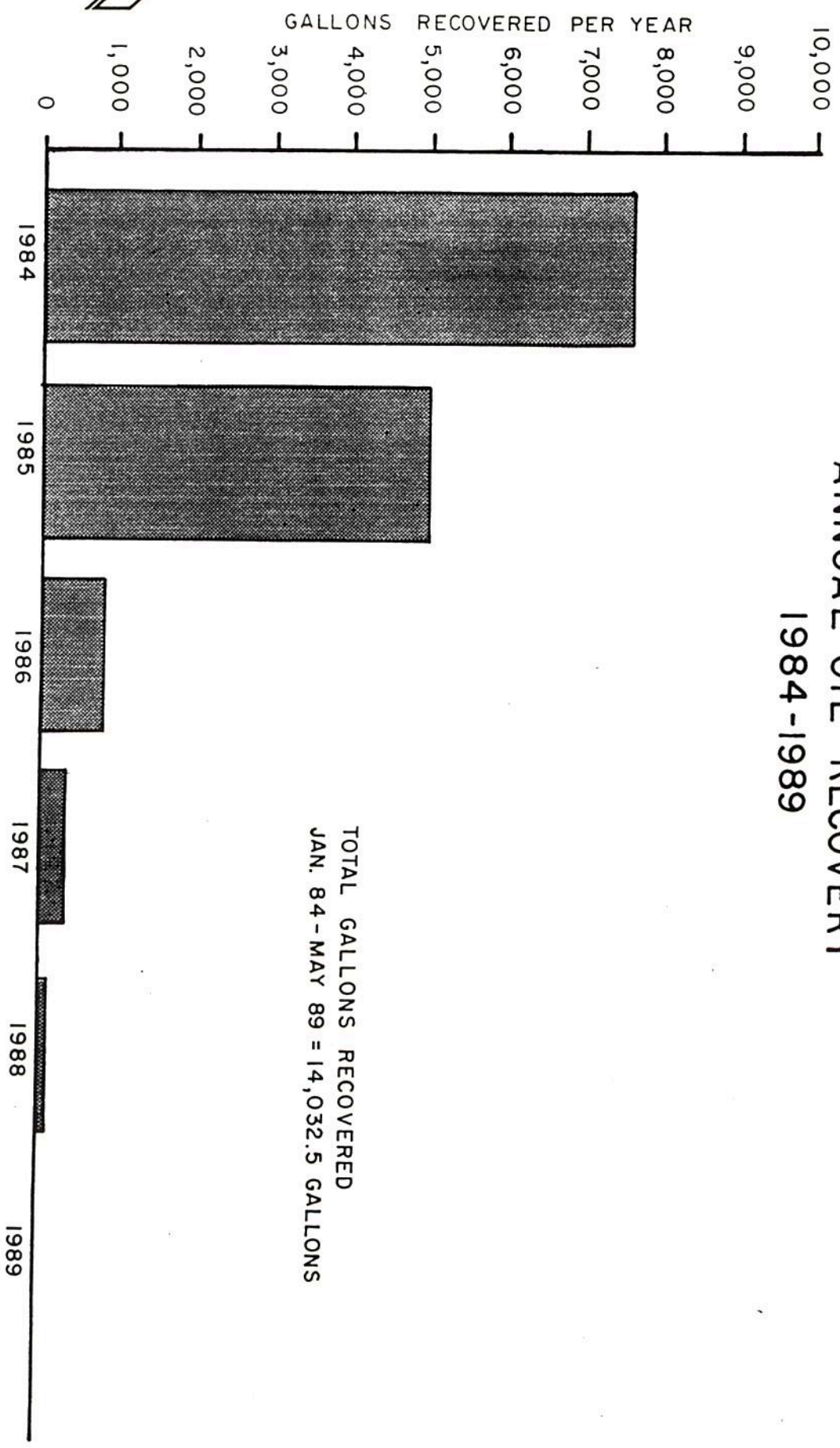
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MEENAN OIL COMPANY
PENNWOOD CROSSING
DEPTHS TO WATER AND OIL
5/18/89

<u>Well No.</u>	<u>Depth to Oil (ft.)</u>	<u>Depth to Water (ft.)</u>	<u>Comment</u>
		14.14	
1	--	13.28	
2	--	13.19	
3	--	13.52	
4	--		Missing
5			Missing
6		15.68	
7	--	14.54	
8	--	13.76	
9	--	14.53	
10	--	14.92	
11	--	12.96	
12			Missing
13		16.53	
14	--	15.58	
15	--	14.27	
16	--	13.69	
17	--	15.86	
18	--	16.22	
19			Missin
20		23.95	
21	--	25.51	
22	--		
23			Missir

ORIGINAL
(Red)

MEENAN OIL COMPANY
PENNWOOD CROSSING
ANNUAL OIL RECOVERY
1984-1989



BLASLAND, BOUCK & LEE
ENGINEERS & GEOSCIENTISTS

FIGURE 2